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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,950	04/07/2006	Mutsuhiko Oishi	L8612.06110	7312

52989 7590 05/01/2009

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EXAMINER	
PHUNG, LUAT	
ART UNIT	PAPER NUMBER
2416	

MAIL DATE	DELIVERY MODE
05/01/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,950	OISHI ET AL.	
	Examiner	Art Unit	
	LUAT PHUNG	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-12 and 15-30* is/are rejected.

7)☒ Claim(s) *1,13 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's arguments filed on January 30, 2009 have been fully considered but they are moot in view of the new ground(s) of rejection.

2. Claims 1, 9, 10, 13, 14, 21, 27 and 29 are amended.

3. Claim 30 is added.

4. Claims 1-30 are pending.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 7, 9, 10, 16, 17, 22, 27, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson et al (US Patent Number 5,991,269) in view of Bae et al (US Patent Number 5,832,387).

Regarding claims 1 and 29, Williamson teaches *a method and a communication apparatus* (Fig. 2) *for executing a wired communication* (Fig. 2, elements 42 and 44) *using a plurality of sub carriers* (abstract, line 3) *comprising:*

a transmission signal generator for generating first and second transmission signals (Fig. 2, element 78 generates signal for transmission as explained in col. 6, lines 19-21);

a transmitter for transmitting the first transmission signal generated by the transmission signal generator; (Fig. 2, element 40; col. 6, lines 19-21; modem transmitting signals)

a transmission signal controller for controlling a transmission power of the second transmission signal (Fig. 2, element 71) *generated by the transmission signal generator* (Fig. 2, element 78 generates signal for transmission as explained in col. 6, lines 19-21) *based on a radiation power in a transmission line in correspondence with a frequency of the sub carrier of a transmission signal* (col. 4, lines 13-16; the controller is based on the balance for a particular carrier frequency; col. 5, lines 31+; the balance represents energy radiation of each sub-carrier in the transmission line; thus effectively the controller is based on radiation power)*; and*

wherein the transmitter transmits the second transmission signal (Fig. 2, elements 40 and 46 are modems, which transmit signals) *the transmission power of which is controlled by the transmission signal controller via the transmission line* (col. 4, lines 13-14; col. 4, line 31; the controller may de-select certain channels, i.e. reduce the transmission power on that channel to zero; col. 9 line 9; increase the transmission power level for some other sub-carriers.)

Williamson teaches *based on a radiation power in a transmission line in correspondence with a frequency of the sub carrier of a transmission* signal, as recited above, but not … *in correspondence with a frequency of the sub carrier of the first transmission signal generated by the transmission signal generator.* However Bae teaches *in correspondence with a frequency of the sub carrier of the first transmission signal generated by the transmission signal generator* (Fig. 8; col. 5, lines 47-55; carrier transmitter 700 generating both first and second transmission signals in an embodiment wherein all of power controlling portion 602 is located in carrier transmitter 602). Thus it would have been obvious to one of ordinary skill in the art to generate both first and second transmission signals from the transmission side as suggested by Bae in the network of Williamson, to simplify implementation of the multicarrier system using wired or modem for transmission (col. 7, lines 1-3).

Regarding claim 7, Williamson in view of Bae further teaches the transmission signal controller selects a modulation system of the sub carrier based on a [] indicating the radiation power from the transmission line (Fig. 2, element 71 shows the controller which controls data modulation as taught in col. 6, line 10. In addition, col. 4, line 12 teaches that the controller is responsive to the channel analyzer, which provides balance assessment of each sub-channel to the controller as taught in col. 6, lines 50-52.)

NOTE: It is suggested that Applicants clarify "based on a [something] indicating the radiation power" in claim 7; it appears to recite "based on a signal".

Regarding claim 9, Williamson in view of Bae further teaches *the transmission line utilizes a pair of lines* (Fig. 2, elements 42 and 44)*, and the transmission signal generator generates the first and second transmission signals transmitted to the pair of lines for each sub carrier and each transmission line based on a transmission data and the radiation power* (Fig. 2 shows that the controller 71 controls the generation of transmission signals in elements 74 and 78, based on the transmission data (DATA IN) and balance assessment from the sub-channel analyzer 102 (col. 6, lines 50-51) which indicates the radiation power (col. 5, lines 60-62.))

Regarding claim 10, Williamson in view of Bae further teaches *the transmission signal generator generates a differential component of the second transmission signal based on the transmission data and generates a common component of the second transmission signal based on the radiation power* (Fig. 2 shows the differential mode component and the common mode component, where the differential mode is related to data transmission (col. 2, lines 5-9), and the common mode is related to radiation (col. 2, lines 20-25)).

Regarding claim 16, Williamson in view of Bae further teaches *the wired transmission utilizes a pair of lines* (Fig. 2, elements 42 and 44)*, further comprising a radiation power detector for indirectly detecting a signal of the radiation power by utilizing signals transmitted through the pair of lines* (Fig. 2, element 102 is a sub-

channel analyzer which performs the steps in Fig. 3, elements 132-138, which uses test signals transmitted through the pair of lines to calculate the balance of a sub-channel, which is an indirect representation of the radiation power as taught in col. 5, lines 60-62.)

Regarding claim 17, Williamson in view of Bae further teaches *the radiation power detector detects an unbalance component of the signals transmitted through the pair of lines* (Fig. 2, element 102 is a sub-channel analyzer which performs the steps in Fig. 3, elements 132-138 to calculate the balance of a sub-channel, which represents the radiation power (col. 5, lines 60-62) caused by the unbalance component of the signal (col. 2, lines 11-20 teaches radiation is caused by mismatches, i.e. unbalance, in the wireline transmission system.))

Regarding claim 22, Williamson in view of Bae further teaches *the radiation power signal indicating the radiation power is acquired only once in starting communication* (col. 8, lines 9-10 teaches balance assessment on a per-call basis, i.e. the balance which represents the radiation power of a subchannel is acquired only once at the start of the communication session.)

Regarding claim 27, Williamson in view of Bae further teaches *a communication system comprising a plurality of communication apparatus connected via a wired transmission line, wherein one communication apparatus out of the plurality of*

communication apparatus is the communication apparatus according to claim 1 for transmitting the detected radiation power signal indicating the detected radiation power to all of remaining communication apparatus out of the plurality of communication apparatus, (Fig. 2, controller 71; Fig. 3, element 142)

wherein the one communication apparatus further includes a radiation power detector for directly detecting the radiation power and a radiation power transmitter for transmitting the radiation power signal indicating the radiation power detected by the radiation power detector to other communication apparatus, (Fig. 2; col. 5, lines 43+)

wherein the remaining communication apparatus are the communication apparatus according to claim 1 for controlling the transmission power of the sub carrier based on the radiation power signal received from the one communication apparatus, (Fig. 2, controller 71; col. 4, lines 13-16; col. 5, lines 60-62) *and*

wherein the remaining communication apparatus further includes a radiation power receiver for receiving a radiation power signal indicating the radiation power from outside (Fig. 2, modems 40, 46; col. 4, lines 13-14, 31; col. 9, line 9).

Regarding claim 30, Williamson in view of Bae further teaches *wherein the first and second transmission signals includes data which is normally transmitted via the transmission line.* (col. 5, lines 9+)

7. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson et al in view of Bae et al, and further in view of Sohner (US Patent Number 5,018,165).

Regarding claim 2, the combination of Williamson and Bae teaches all of the subject matter except *the transmission signal controller reduces the transmission power of the sub carrier of the frequency in which the radiation power exceeds a predetermined value*. However Sohner teaches *the transmission signal controller reduces the transmission power of the sub carrier of the frequency in which the radiation power exceeds a predetermined value* (Sohner, col. 7, lines 2-7 teaches measuring the radiation field strength of a transmission line and adjusting the signal power level to stay within a radiation emission limit specified by the FCC in Table 4. Sohner, col. 3, lines 4-6 teaches reducing the transmission power to a pre-selected level to stay within FCC radiation emission limit). Thus it would have been obvious for one of ordinary skill in the art at the time the invention was made to implement *the transmission signal controller reduces the transmission power of the sub carrier of the frequency in which the radiation power exceeds a predetermined value* of Sohner into Williamson and Bae, since Williamson and Bae suggests controlling the transmission power of a subcarrier based on radiation power (something broad) in general, and Sohner suggests the beneficial use of reducing the transmission power of the subcarrier when the radiation power exceeds a predetermined value such as to adjust the

transmission power more efficiently so that the system should comply to FCC requirements in the analogous art of wireline communications.

Regarding claim 3, Williamson further teaches *the transmission signal controller nullifies the transmission power of the sub carrier of the frequency in which the radiation power exceeds the predetermined value* (col. 3, lines 60-63 teaches of de-selecting, i.e. nullifying, those channels having a balance value below a predetermined threshold. As taught in col. 5, lines 5-8, poor balance means high radiation power. Thus Williamson, col. 3, lines 60-63, effectively teaches nullifying those channels in which the radiation power exceeds a predetermined threshold.)

Regarding claim 4, Sohner further teaches *the transmission signal controller reduces the transmission power of the sub carrier of the frequency in which the radiation power exceeds the predetermined value until the radiation power becomes equal to or lower than the predetermined value* (Sohner, col. 7, lines 2-7 teaches measuring the radiation field strength of a transmission line and adjusting the signal power level to stay within a radiation emission limit specified by the FCC in Table 4. Sohner, col. 3, lines 4-6 teaches reducing the transmission power to a pre-selected level to stay within FCC radiation emission limit, i.e. until the radiation power becomes equal to or lower than the pre-selected level.)

Regarding claim 5, Sohner further teaches *the transmission signal controller increases the transmission power of the sub carrier of the frequency in which the radiation power is equal to or lower than the predetermined value* (Sohner, col. 8, lines 9-12, teaches boosting the transmission power of the signal to the maximum without exceeding FCC limits on radiation emission in Table 4.)

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson et al, Bae et al and Sohner in view of Quigley (US 20010055319A1).

Regarding claim 8, the combination of Williamson, Bae and Sohner teaches that when *the radiation power exceeds the predetermined value* then the transmission power for that sub-carrier will be reduced (see claim 2), which means for the same noise level the signal-to-noise for that sub-channel will be reduced and the sub-channel quality will be reduced accordingly. The combination does not teach *the transmission signal controller changes the modulation system of the sub carrier of the frequency… to a modulation system having a relatively low communication rate*. However Quigley teaches *the transmission signal controller changes the modulation system of the sub carrier of the frequency… to a modulation system having a relatively low communication rate* (Quigley, paragraph [0313] teaches a cable transmission system which has two different modulation schemes, one with higher data rate when the channel quality is higher, the other with lower data rate when the channel quality is lower.) Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made

to implement *the transmission signal controller changes the modulation system of the sub carrier of the frequency… to a modulation system having a relatively low communication rate* of Quigley into Williamson, Bae and Sohner, since Williamson, Bae and Sohner suggest changing the modulation system according to the radiation power which consequently affects the transmission power and the channel quality (something broad) in general, and Quigley suggests the beneficial use of using a high data rate modulation scheme when the channel quality is high and a low data rate modulation scheme when the channel quality is low such as to transmit data more efficiently in the analogous art of wireline communications.

9. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson et al and Bae et al in view of Ikami (US 2003/0206160A1).

Regarding claim 11, the combination of Williamson and Bae teaches all of the subject matter except *the common component is generated such that the radiation power is reduced*. However Ikami teaches *the common component is generated such that the radiation power is reduced* (Ikami, paragraph [0035], lines 16-28, teaches of EMI radiation suppression by introducing a second common mode component of the same value and opposite direction.) Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement *the common component is generated such that the radiation power is reduced* of Ikami into Williamson and Bae, since Williamson suggests a common mode component (something broad) in general,

and Ikami suggests the beneficial use of a common mode component of equal value and opposite direction such as to reduce radiation in the analogous art of EMI suppression.

Regarding claim 12, Williamson further teaches *the radiation power includes a radiation power component when a predetermined test signal is transmitted to the transmission line as the differential signal and a radiation power component when the predetermined test signal is transmitted to the transmission line as a common mode signal* (col. 6, lines 62-63 teaches a training sequence which is a predetermined pattern of data words or bits. This training sequence is transmitted in both differential mode and common mode, and the quantitative assessments for both modes are used to calculate balance (Williamson, col. 7, lines 15-20), which represents the radiation power component (col. 5, lines 60-62)).

10. Claims 15, 18-20 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson et al and Bae et al in view of Cern (US 2004/0109499 A1).

Regarding claim 15, the combination of Williamson and Bae does not teach *a radiation power detector for directly detecting the radiation power*. However Cern teaches *a radiation power detector for directly detecting the radiation power* (Cern, Fig. 3, element 315, as explained in paragraph [0026], senses radiation field strength of

transmission line 320 and sends a feedback to element 310 to control signal transmission power.) Thus it would have been obvious for one of ordinary skill in the art at the time the invention was made to implement *a radiation power detector for directly detecting the radiation power* of Cern into Williamson and Bae, since Williamson suggests controlling transmission power of a subchannel to reduce radiation (something broad) in general and Cern suggests the beneficial use of directly detecting radiation power such as to track radiation level more closely and adjust transmission power to reduce radiation more efficiently in the analogous art of wireline communications.

Regarding claim 18, Cern further teaches *a radiation power transmitter for transmitting the radiation power signal indicating the radiation power detected by the radiation power detector to other communication apparatus* (Cern, Fig. 3, element 315, as explained in paragraph [0026], sends the radiation field strength of transmission line 320 to modem 300.)

Regarding claim 19, Cern further teaches *a power control signal transmitter for transmitting a power control signal calculated based on the detected radiation power for controlling the transmission power of the sub carrier to other communication apparatus* (Cern, Fig. 3 shows power control system sends control signal to power amplifier 115 based on the detected radiation power received from sensor 315.)

Regarding claim 20, the combination of Williamson and Bae teaches all of the subject matter except *a radiation power receiver for receiving a radiation power signal indicating the radiation power from outside*. However, Cern teaches *a radiation power receiver for receiving a radiation power signal indicating the radiation power from outside* (Cern, Fig. 3, element 325 is an antenna to receive radiation power signal indicating the radiation power from outside.) Thus it would have been obvious for one of ordinary skill in the art at the time the invention was made to implement *a radiation power receiver for receiving a radiation power signal indicating the radiation power from outside* of Cern into Williamson and Bae, since Williamson suggests controlling transmission power of a subchannel to reduce radiation (something broad) in general and Cern suggests the beneficial use of a radiation power receiver to directly detect radiation power such as to track radiation level more closely and adjust transmission power to reduce radiation more efficiently in the analogous art of wireline communications.

Regarding claim 28, Cern further teaches *a communication system comprising a plurality of communication apparatus connected via a wired transmission line* (Cern, Fig. 3)*, wherein one communication apparatus out of the plurality of communication apparatus is the communication apparatus according to claim 19 for transmitting the power control signal to all of remaining communication apparatus out of the plurality of communication apparatus* (Cern, Fig. 3, element 310 shows a power control system sending the control signal to power amplifier 115)*; and wherein the remaining*

communication apparatus control the transmission power of the sub carrier based on the transmission power control signal received from the one communication apparatus (Cern, Fig. 3, element 115 shows a power amplifier receiving the control signal from power control system 310).

11. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson et al and Bae et al in view of Abraham (US Patent Number 6,407,987 B1).

Regarding claim 21, Williamson further teaches *utilizes the radiation power signal… for controlling the transmission signal* (col. 4, lines 13-16 teaches that the controller (Fig. 2, element 71) is based on the balance for a particular carrier frequency. In addition, col. 5, lines 60-62 teaches that the balance represents energy radiation of each sub-carrier in the transmission line. Thus effectively the controller is based on radiation power). The combination of Williamson and Bae teaches all of the subject matter except *the transmission signal controller intermittently makes the transmission powers of all of the sub carriers constant*. However Abraham teaches *the transmission signal controller intermittently makes the transmission powers of all of the sub carriers constant* (Abraham, col. 8, lines 37-39, teaches that radiation emission level is typically measured at the same transmission level. It follows that the transmission signal controller makes the transmission power constant whenever a measurement occurs). Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement *the transmission signal controller intermittently makes*

the transmission powers of all of the sub carriers constant of Abraham into Williamson and Bae, since Williamson suggests measuring the radiation emission level (something broad) in general and Abraham suggests the beneficial use of measuring radiation at a constant transmission power level such as to obtain more accurate radiation measurement to reduce radiation more effectively in the analogous art of wireline communications.

12. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson et al and Bae et al in view of Barlev (US Patent Number 7,133,441 B1).

Regarding claim 23, the combination of Williamson and Bae teaches all of the subject matter except *the radiation power signal indicating the radiation power is acquired periodically*. However Barlev teaches *the radiation power signal indicating the radiation power is acquired periodically* (Barlev, col. 26, lines 48-56, teaches a transmission system of copper wires where the radiation power is measured periodically and fed back to control the signal power to ensure compliance to FCC regulations.) Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement *the radiation power signal indicating the radiation power is acquired periodically* of Barlev into Williamson and Bae, since Williamson suggests acquiring radiation power assessment to control transmission power (something broad) in general and Barlev suggests the beneficial use of periodically measuring radiation power such as to keep track of the radiation power more closely

and adjust the transmission power to reduce radiation more efficiently in the analogous art of wireline communications.

13. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson et al and Bae et al in view of Kodama (US 2003/0156014 A1).

Regarding claim 24, the combination of Williamson and Bae teaches all of the subject matter except *the transmission line is a power line*. However Kodama teaches *the transmission line is a power line* (Kodama, abstract). Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement *the transmission line is a power line* of Kodama into Williamson, since Williamson suggests a communication apparatus that transmits data over a transmission line (something broad) in general, and Kodama suggests the beneficial use of a power line for the transmission line such as to take advantage of an existing infrastructure to transmit data in the analogous art of telecommunications.

Regarding claim 25, the combination of Williamson and Bae teaches all of the subject matter except *the wired transmission is a transmission of an OFDM system*. However Kodama teaches *the wired transmission is a transmission of an OFDM system* (Kodama, paragraph [0014]). Thus it would have been obvious to one of ordinary skill at the time the invention was made to implement *the wired transmission is a transmission of an OFDM system* of Kodama into Williamson and Bae, since Williamson suggests a

multi-carrier system (something broad) in general and Kodama suggests the beneficial use of OFDM such as to transmit data more efficiently in the analogous art of telecommunications.

Regarding claim 26, Kodama further teaches *the wired transmission is the transmission of the OFDM system* (Kodama, paragraph [0014]) *using a wavelet transformation* (Kodama, Fig. 3, elements 103 and 115).

Allowable Subject Matter

14. Claims 6, 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure (see form 892).

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUAT PHUNG whose telephone number is (571) 270-3126. The examiner can normally be reached on M-Th 7:30 AM - 5:00 PM, F 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Q. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. P./

Examiner, Art Unit 2416

/Ricky Ngo/

Supervisory Patent Examiner, Art Unit 2416